The Cutter with the Pulse...

Abrasive sectioning in the materials laboratory presents a number of extraordinary challenges. An abrasive cutter should have the power to cut through large, tough parts and the sensitive precision to maintain the structural integrity of delicate samples. It should be built to withstand years of rigorous use in a corrosive environment and provide for economy in the usage of cut-off wheels. The machine should be easy to operate and maintain, and be quiet and attractive.

The all new ABRASIMATIC™ meets these challenges, combining automation with a revolutionary (patent pending) pulse cutting concept. The operator can choose between two modes of automatic cutting - continuous or pulsed feed. In difficult cutting applications, the pulse mode provides a high quality burn-free cut surface where other machines would simply stall or burn the sample surface. In both modes of operation, the samples are fed into the rotating wheel by a variable rate pneumatic/hydraulic feed system. The cutting process is monitored with an LED bar-graph motor load indicator.

The ABRASIMATIC™ Cutter, powered by a 5 HP (3.7 Kw) continuous duty motor, drives a 10" (254 mm) diameter cut-off wheel and achieves a capacity of up to 3" (75 mm) solid stock. Its recirculating coolant system, included as standard equipment, has a 10 gallon (38 liter) tank to supply an adjustable flow of coolant to both the cutting wheel and the sample.

The structural components of the ABRASIMATIC™ include a heavy-duty alloy base casting for exceptional rigidity and a corrosion-proof glass-reinforced plastic (GRP) hood to minimize noise during operation. The well-lighted, spacious cutting chamber provides easy access for loading, unloading and wheel changing while a large window affords the operator an unrestricted view of the sectioning process. Twin left and right-hand MET-KLAMP™ VI Vises with serrated gripping faces clamp samples quickly and positively with a push rod and cam lever action and aid in preventing cutting burns. A sealed side access port permits the sectioning of long pieces and a cleanout hose makes the wash-down of the cutting chamber an easy task.

Operator safety was of paramount concern to the designers of the ABRASIMATIC™ Cutter. All electrical components are in a separate compartment, totally isolated from the cutting chamber. Cutter controls on the convenient front panel are on a low-voltage circuit. Electrical interlocks and an electronic brake shut down the cutter and instantly stop the cutting wheel, simultaneously with the opening of the cutting chamber door. The machine incorporates overload and coolant overflow protection with associated indicator lights to alert the operator, should a problem arise.

The ABRASIMATIC™, available as a table model or floor model cutter, is designed for high quality, high productivity cutting of nearly all engineering materials. Its large capacity, automatic operation and power make it the ideal choice for both laboratory and production cutting applications.

WHY PULSE CUTTING?
Some materials are difficult to cut, even when the correct abrasive wheel has been selected. This is usually caused by failure of the wheel bond to break down, causing the wheel to become glazed with specimen material. When this happens, the cutting rate decreases and in extreme cases, the wheel stops cutting. If the operator continues to apply pressure, the specimen could be damaged due to the build-up of frictional heat.

Faced with such a problem, a skilled technician using a conventional abrasive cutter would manually try to apply a pulsing motion in an effort to break down the wheel bond. This action could enable cutting to continue, however it would require considerable physical effort and constant attention from the operator.

Pulse Cutting is an integral feature available to the operator of every ABRASIMATIC™ Cutter. This function provides an automatically applied adjustable pulsing action to allow the abrasive wheel bond to break down, continually exposing the fresh abrasive particles needed to cut effectively. Pulse Cutting simulates the motions of a skilled technician, without the time and effort usually required, in cutting tough materials such as nickel-based super alloys, through-hardened steel and ceramics.
Panel Mounted Controls are conveniently located and designed for ease of operation.

Floor Model ABRASIMATIC ® Automatic Abrasive Cut-Off Machine

Twin MET-KLAMP ® VI Vises grip samples quickly and securely, eliminating cutting burrs.

Recirculating Coolant System supplies coolant to wheel and sample from a 10 gallon (38 liter) tank.

When sectioning hard and tough materials, exclusive Pulse Cutting Action (patent pending) prevents abrasive wheel glazing, by controlled application and relaxation of cutting force.
SPECIFICATIONS

No. 10-1060-260 ABRASIMATIC™ AUTOMATIC ABRASIVE CUT-OFF MACHINE, table model, with continuous duty 5 HP (3.7 Kw) cutter motor, 3450 rpm, for operation on 208-230 V, 60 Hz, 3 phase; magnetic starters, electronic brake, push button controls on low-voltage circuit, bar-graph LED motor load indicator, pneumatic/hydraulic variable feed system for pulsed or continuous cutting, integral filter-regulator-lubricator (FRL) for air supply, heavy duty alloy base casting, corrosion resistant glass-reinforced plastic (GRP) cabinet, full view cutting chamber access door, side access port for long samples, clean-out hose and solid state coolant overflow protection system, dual right and left-hand MET-KLAMP™ VI Vises and recirculating coolant system with 1/4 HP (50 W) pump motor and 10 gallon (38 liter) tank. Includes samples of BUEHLER® Soluble Oil and six assorted 10" (254 mm) cut-off wheels. Operating instructions.

No. 10-1060-250 ABRASIMATIC™, same as above but for operation on 190-220 V, 50 Hz, 3ø; spindle speed 2,875 rpm.

No. 10-1060-400 ABRASIMATIC™, same as above but for operation on 380-440 V, 50 Hz, 3ø; spindle speed 2,875 rpm.

No. 10-1060-460 ABRASIMATIC™, same as above but for operation on 480 V, 60 Hz, 3ø; spindle speed 3,450 rpm.

No. 10-1060-560 ABRASIMATIC™, same as above but for operation on 575 V, 60 Hz, 3ø; spindle speed 3,450 rpm.

Overall Dimensions: 28½"W x 26¼"D x 24"H (72 x 67 x 61 cm)

Approx. Shipping Weight: 280 lbs (127 kg)

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No. 10-1065-460 ABRASIMATIC™, same as above but for operation on 480 V, 60 Hz, 3ø; spindle speed 3,450 rpm.

No. 10-1065-560 ABRASIMATIC™, same as above but for operation on 575 V, 60 Hz, 3ø; spindle speed 3,450 rpm.

Overall Dimensions: 28½"W x 27¼"D x 54"H (72 x 69 x 137 cm)

Approx. Shipping Weight: 505 lbs (230 kg)

NOTE: Compressed air required for operation.

ABRASIVE CUT-OFF WHEELS

No. 10-4210-010 CUT-OFF WHEEL, 10" x 0.075" x 1/2", (254 x 1.9 x 32 mm), for cutting tool steel RC 55 and above.

No. 10-4212-010 CUT-OFF WHEEL, 10" x 0.075" x 1/2", (254 x 1.9 x 32 mm), for cutting tool steel RC 35-55.

No. 10-4220-010 CUT-OFF WHEEL, 10" x 0.075" x 1/2", (254 x 1.9 x 32 mm), for cutting soft steel RC 15-35, RB 45-90.

No. 10-4227-010 CUT-OFF WHEEL, 10" x 0.040" x 1/2", (254 x 1.0 x 32 mm), ultra-thin wheel for delicate cutting.

No. 10-4240-010 CUT-OFF WHEEL, 10" x 0.063" x 1/2", (254 x 1.6 x 32 mm), for cutting hard non-metals, glass, rocks.

No. 10-4245-010 CUT-OFF WHEEL, 10" x 0.063" x 1/2", (254 x 1.6 x 32 mm), for cutting non-ferrous metals.

No. 10-5210-010 CUT-OFF WHEEL, 10" x 0.063" x 1/2", (254 x 1.6 x 32 mm), for tool steels, production cutting.

No. 11-4610 RESIN BONDED DIAMOND BLADE, 10" x 0.552" x 1/2", (254 x 1.3 x 32 mm), for cutting extremely hard materials, ceramics, cemented carbides.

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